

REMARKS

Claims 5, 9 and 29-35 were examined and reported in the Office Action. Claim 5 is amended. Claims 1, 5 and 8-35 remain.

Applicant requests reconsideration of the application in view of the following remarks.

I. 35 U.S.C. § 103

A. It is asserted in the Office Action that claims 5, 29, 30, 33 and 34 are rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over U. S. Patent No. 5,869,208 issued to Miyasaka ("Miyasaka "), in view of JP 1998-288495. Applicant respectfully traverses the aforementioned rejection for the following reasons.

According to MPEP §2142

“[t]o establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.” (*In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)).

Further, according to MPEP §2143.03, “[t]o establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. (*In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974).” “*All words in a claim must be considered in judging the patentability of that claim against the prior art.*” (*In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970), emphasis added.)

Miyasaka discloses a lithium ion secondary battery. It is asserted in the Office Action that Miyasaka is “silent regarding the additive being at least one of Si, B, Ga, Ge, Ca, Mg, Sr and

Ba.” Applicant agrees. Applicant notes, however, that claim 5 was amended in the last response by deleting Boron and Magnesium.

It is asserted in the Office Action that “JP 1998-288495 teaches the employment of magnesium in lithium oxide electrode materials.” As asserted above, magnesium was deleted from claim 5 in the last response.

Applicant notes, however, that it is asserted in the second 35 U.S.C. § 103(a) rejection (see section I(B)) that “JP 1998-288495 teaches the employment of silicon in lithium oxide electrode materials.” In Applicant’s claimed invention, Si is used as an additive to prepare a positive active material composition, and Si is present in a physical mixture with a positive active material, i.e. a separate mixture from the positive active material. Si, however, was an impurity to be added during the positive active material preparation, rather than the positive active material composition preparation in JP 1998-288495. Thus, it is expected that Si is included in the positive active material, and is not present in a separate mixture from the positive active material.

Even if Miyasaka is combined with JP 1998-288495, the resulting invention would still not teach, disclose or suggest Applicant’s amended claim 5 limitations of

forming a positive electrode by physically mixing a positive active material with an additive, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one of Si, Ga, Ge, Ca, Sr and Ba; forming a negative electrode including a carbonaceous material as an active material; preparing an electrolyte including an organic solvent including a lithium salt dissolved in the organic solvent; coating the positive active material composition on a current collector after heat treating to place the positive active material in a uniform crystalline form; and drying the current collector coated with a positive active material slurry composition, wherein the amount of the additive is 1.0 to 10 wt% of the positive active material, and the lithiated transition metal compound is selected from the group consisting of the formulas 1 to 13.

Since neither Miyasaka, JP 1998-288495, and therefore, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant’s claim 5, as listed above, Applicant’s

claim 5 is not obvious over Miyasaka in view of JP 1998-288495 since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claims that directly or indirectly depend from claim 5, namely claims 29, 30, 33 and 34, would also not be obvious over Miyasaka in view of JP 1998-288495 for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection for claims 5, 29-30 and 33-34 is respectfully requested.

B. It is asserted in the Office Action that claims 5, 29, 30, 33 and 34 are rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over U. S. Patent No. 5,851,696 issued to Saidi et al. ("Saidi"), in view of JP 1998-288495. Applicant respectfully traverses the aforementioned rejection for the following reasons.

Saidi discloses an electrochemical cell having a nonmetal negative electrode without using any solid metal active material. It is asserted in the Office Action that Saidi is "silent regarding the additive being at least one of Si, B, Ga, Ge, Ca, Mg, Sr and Ba." Applicant agrees. As asserted above in section I(A), claim 5 was amended in the last response by deleting Boron and Magnesium.

It is asserted in the Office Action that "JP 1998-288495 teaches the employment of silicon in lithium oxide electrode materials." As asserted above, JP 1998-288495 does not teach, disclose or suggest that Si is used as an additive to prepare a positive active material composition, and Si is present in a physical mixture with a positive active material, i.e. a separate mixture from the positive active material.

Even if Saidi is combined with JP 1998-288495, the resulting invention would still not teach, disclose or suggest Applicant's amended claim 5 limitations of

forming a positive electrode by physically mixing a positive active material with an additive, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one of Si, Ga, Ge, Ca, Sr and Ba; forming a negative electrode including a carbonaceous material as an active material; preparing an electrolyte including an organic solvent including a lithium salt dissolved in the organic solvent; coating the

positive active material composition on a current collector after heat treating to place the positive active material in a uniform crystalline form; and drying the current collector coated with a positive active material slurry composition, wherein the amount of the additive is 1.0 to 10 wt% of the positive active material, and the lithiated transition metal compound is selected from the group consisting of the formulas 1 to 13.

Since neither Saidi, JP 1998-288495, and therefore, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant's claim 5, as listed above, Applicant's claim 5 is not obvious over Saidi in view of JP 1998-288495 since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claims that directly or indirectly depend from claim 5, namely claims 29, 30, 33 and 34, would also not be obvious over Saidi in view of JP 1998-288495 for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection for claims 5, 29-30 and 33-34 is respectfully requested.

C. It is asserted in the Office Action that claim 35 is rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over Saidi, in view of JP 1998-288495 and further in view of U. S. Publication No. 2001/0010807 by Matsubara ("Matsubara"). Applicant respectfully traverses the aforementioned rejection for the following reasons.

Applicant's claim 35 is directly dependent on amended claim 5. Applicant has addressed Saidi and JP 1998-288495 regarding claim 5 above in section I(B).

Matsubara discloses a lithium/nickel/cobalt composite positive active material for a secondary battery. Matsubara, however, does not teach, disclose or suggest the limitations contained in Applicant's claim 5 of "the additive is at least one of Si, Ga, Ge, Ca, Sr and Ba," where the additive is not used as a conductive agent, is not an active material in the positive electrode and does not participate in an electrochemical reaction in the positive electrode.

As asserted above, JP 1998-288495 does not teach, disclose or suggest that Si is used as an additive to prepare a positive active material composition, and Si is present in a physical mixture with a positive active material, i.e. a separate mixture from the positive active material.

Therefore, even if Saidi is combined with JP 1998-288495 and Matsubara, the resulting invention would still not teach, disclose or suggest Applicant's claim 5 limitations of "forming a positive electrode by physically mixing a positive active material with an additive, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one of Ga, Ge, Ca, Sr and Ba."

Since neither Saidi, JP 1998-288495, Matsubara, and therefore, nor the combination of the three, teach, disclose or suggest all the limitations of Applicant's claim 5, as listed above, Applicant's claim 5 is not obvious over Saidi in view of JP 1998-288495 and Matsubara since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claims that directly depends from claim 5, namely claim 35, would also not be obvious over Saidi in view of JP 1998-288495 and Matsubara for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejection for claim 35 is respectfully requested.

D. It is asserted in the Office Action that claims 5, 9 and 29-32 are rejected in the Office Action under 35 U.S.C. § 103(a), as being unpatentable over U. S. Patent No. 6,589,694 issued to Goshō et al. ("Goshō") and further in view of JP 1998-288495. Applicant respectfully traverses the aforementioned rejection for the following reasons.

Goshō discloses a positive electrode active material, a negative electrode active material and an electrolyte used in a non-aqueous secondary battery. Goshō, however, does not teach, suggest or disclose the limitations contained in Applicant's claim 5 of "the additive is at least one of Si, Ga, Ge, Ca, Sr and Ba," where the additive is not used as a conductive agent, is not an active material in the positive electrode and does not participate in an electrochemical reaction in the positive electrode.

It is asserted in the Office Action that “JP 1998-288495 teaches the employment of magnesium in lithium oxide electrode materials.” As asserted above, magnesium was deleted from claim 5 in the last response.

Applicant notes, however, that it is asserted in the second 35 U.S.C. § 103(a) rejection (see section I(B)) that “JP 1998-288495 teaches the employment of silicon in lithium oxide electrode materials.” JP 1998-288495, however, does not teach, disclose or suggest that Si is used as an additive to prepare a positive active material composition, and Si is present in a physical mixture with a positive active material, i.e. a separate mixture from the positive active material. Therefore, even if Gosho is combined with JP 1998-288495, the resulting invention would still not teach, disclose or suggest Applicant’s claim 5 limitations of “forming a positive electrode by physically mixing a positive active material with an additive, the positive active material being selected from the group consisting of lithiated transition metals, and the additive at least one of Ga, Ge, Ca, Sr and Ba.”

Since neither Gosho, JP 1998-288495, and therefore, nor the combination of the two, teach, disclose or suggest all the limitations of Applicant’s claim 5, as listed above, Applicant’s claim 5 is not obvious over Gosho in view of JP 1998-288495 since a *prima facie* case of obviousness has not been met under MPEP §2142. Additionally, the claims that directly or indirectly depend from claim 5, namely claims 9 and 29-32, would also not be obvious over Gosho in view of JP 1998-288495 for the same reason.

Accordingly, withdrawal of the 35 U.S.C. § 103(a) rejections for claims 5, 9 and 29-32 are respectfully requested.

CONCLUSION

In view of the foregoing, it is submitted that claims 1, 5 and 8-35 patentably define the subject invention over the cited references of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes a telephone conference would be useful in moving the case forward, he is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being submitted electronically via EFS Web on the date shown below to the United States Patent and Trademark Office.


Jean Svoboda

Date: September 4, 2007